

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 18 JUN 2004

WIPO PCT

04 OCT 2004

Applicant's or agent's file reference PCT 21074Y		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US03/10442	International filing date (day/month/year) 04 April 2003 (04.04.2003)	Priority date (day/month/year) 08 April 2002 (08.04.2002)	
International Patent Classification (IPC) or national classification and IPC IPC(7): A61K 31/4375, 31/4709, 31/4985, 31/52; C07D 401/14, 403/10, 403/14, 417/14, 473/32. and US Cl.: 514/263.22, 249, 300, 314; 544/277, 350,353; 546/122, 173.			
Applicant MERCK & CO., INC.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u> </u> sheets.</p> <p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input checked="" type="checkbox"/> Non-establishment of report with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application 			
Date of submission of the demand 20 October 2003 (20.10.2003)		Date of completion of this report 29 April 2004 (29.04.2004)	
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230		Authorized officer <i>Emily Bernhardt</i> Telephone No. (571) 272-2717	

Form PCT/IPEA/409 (cover sheet)(July 1998)

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US03/10442

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed.☒ the description:pages 1-165 as originally filedpages NONE, filed with the demandpages NONE, filed with the letter of _____.☒ the claims:pages 166-220, as originally filedpages NONE, as amended (together with any statement) under Article 19pages NONE, filed with the demandpages NONE, filed with the letter of _____.☒ the drawings:pages NONE, as originally filedpages NONE, filed with the demandpages NONE, filed with the letter of _____.☒ the sequence listing part of the description:pages 1-4, as originally filedpages NONE, filed with the demandpages NONE, filed with the letter of _____.

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☒ contained in the international application in printed form.☒ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☐ The amendments have resulted in the cancellation of:☐ the description, pages NONE☐ the claims, Nos. NONE☐ the drawings, sheets/fig NONE5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. _____

PCT/US03/10442

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The question whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been and will not be examined in respect of:

- ☐ the entire international application,
☒ claims Nos. 1-5, 9, 12, 15, 18-26 (all in part)

because:

- ☐ the said international application, or the said claim Nos. _____ relate to the following subject matter which does not require international preliminary examination (*specify*):

- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. _____ are so unclear that no meaningful opinion could be formed (*specify*):

- ☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed.

- ☒ no international search report has been established for said claims Nos. 1-5, 9, 12, 15, 18-26 (all in part)

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

- ☐ the written form has not been furnished or does not comply with the standard.
☐ the computer readable form has not been furnished or does not comply with the standard.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

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V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims <u>2,3,5-8,10,11,13-17, 20-26</u>	YES
	Claims <u>1,4,9,12,18 and 19</u>	NO
Inventive Step (IS)	Claims <u>2,3,5-8,10,11,13-17, 20-26</u>	YES
	Claims <u>1,4,9,12,18 and 19</u>	NO
Industrial Applicability (IA)	Claims <u>1-26</u>	YES
	Claims <u>NONE</u>	NO

2. CITATIONS AND EXPLANATIONS

Claims 1,4,9,12,18 and 19 lack novelty and thus an inventive step under PCT Article 33(2)-(3) as being anticipated and thus rendered obvious over Venugopalan. The journal article describes a compound within the instant scope for use in determining antiamebic activity. See compound 15 in Table 1 as well as results for its biological activity in Table 2. Said compound is covered by the claims when R2 is alkylene (in choice 1) and is substituted by Rz where Rz can be a heterocycle (in choice 12) wherein substitution with aryl is permitted and where q=2 and Q can be aryl and one or more methoxy is permitted on benzene ring of quinoxaline ring.

Claims 2,3,5-8,10,11,13-17 and 20-26 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the particular functional groups permitted in these claims.

Claims 1-26 meet the criteria set out in PCT Article 33(4), and thus possess industrial applicability because the subject matter claimed can be made or used in industry. Description pages lists the treatment of cancer based on compounds' ability to inhibit one or more serine/threonine kinases.

PATENT COOPERATION TREATY

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NOTE OF INFORMAL COMMUNICATION WITH THE APPLICANT

(PCT Rule 66.6)

International application No. PCT/US03/10442	Applicant's or agent's file reference PCT 21074Y	Date of informal communication (day/month/year) 28 April 2004 (28.04.2004)
Applicant MERCK & CO., INC.		

<u>Communication</u> <input checked="" type="checkbox"/> by telephone <input type="checkbox"/> personal	<u>Participants</u> <input checked="" type="checkbox"/> Applicant: MERCK & CO., INC. <input checked="" type="checkbox"/> Agent: Mr. Leff <input checked="" type="checkbox"/> Examiner(s): Emily Bernhardt	<input type="checkbox"/> Identity checked <input checked="" type="checkbox"/> authorization checked <input type="checkbox"/> personally known
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Summary of communication:

The examiner requested permission to go directly to a 409 despite the presence of an "X" reference and thus need to make a negative statement in view of the lateness in submitting an opinion. Mr. Leff authorized permission to proceed to a 409.

☐ An extension of time limit is granted (Form PCT/IPEA/427).

☒ A copy of this note is being sent to the applicant with Form PCT/IPEA/429.

PCT/IPEA/424.

Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230 Form PCT/IPEA/428 (July 1992)	Authorized officer <i>Emilia Bernhardt</i> Emily Bernhardt Telephone No. (571) 272-2717
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